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ABSTRACT

This document reports on a study of the nature, causes and consequences of team learning among faculty in five secondary schools. Data were collected primarily through group interviews; 48 individual team members also responded to an 11-item survey about team learning conditions. From the data analysis, three teams were classified as functional and three as dysfunctional. Each team is described in terms of conditions for team learning, team learning processes, team learning outcomes, conditions external to the team influencing learning, team leadership, stimulus for team learning, and quantitative results. The functional teams met the conditions for team learning, had a large repertoire of effective group problem-solving strategies, and attributed most of their reported changes to work that occurred prior to the interview. The dysfunctional teams lacked many of the internal conditions for team learning, and most of the evidence concerning their problem-solving processes and learning outcomes appeared to have been stimulated by the research interview itself. While the conditions fostering or inhibiting learning among functional teams were similar, dysfunctional teams varied. Finally, the evidence suggested that teams were capable of learning and successfully working with initiatives mandated from outside the school. (Contains 26 references.) (ND)

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Team Learning In Secondary Schools

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Team Learning In Secondary Schools

Among the many initiatives associated with school restructuring, undoubtedly the most pervasive is site-based management (Murphy & Beck, 1995; Mohrman et al, 1994). But to acknowledge that this is the case contributes only marginally to our understanding of what is actually transpiring in schools claiming to be "doing it". Variation in the extent to which SBM is implemented is one source of confusion about what "doing it" actually means. But an even more basic source of confusion can be found in the multiple, legitimate models of SBM available to be implemented. Murphy and Beck (1995) identify three such models: administrative control SBM, in which the principal retains primary decision-making power; community control SBM, in which parents and other community members dominate school-level decision-making groups, such as school councils; and professional control SBM. In the latter of these three models, school staffs, as a whole, and teachers, in particular, play the central role in decision making.

All forms of SBM assume increased use of some form of participatory decision making. But community and professional control models are less tolerant, by design, of mere consultation by the principal with others in the school (a not uncommon practice), as compared with an administrative control model. Furthermore, community control models, with their reliance on school councils, are expressly designed to ensure that the rights of community stakeholders are honored in schools, a largely political goal for participatory decision making. In contrast, the purpose for professional control SBM appears to be improved educational practice, with fewer, other competing reasons. In the context of such an SBM model, the chances seem

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theoretically better that the efforts of participants will actually foster the individual and collective learning needed to improve the quality of instruction in the school. This may explain the results of a recent synthesis of empirical evidence concerning SBM effects, which Leithwood and Menzies sum up as follows:

> ...professional control SBM appears to have more positive effects on the practices of teachers than either of the other two forms, and no more negative effects.... Unexpectedly, as well, review evidence suggests that professional control SBM is the most likely form of SBM to increase professional accountability to parents and the wider community (1996, p. 44).

The evidence reviewed by Leithwood and Menzies indicates that usually the positive effects of SBM are undetectable; like Mohrman and her colleagues (1994), they suggest that SBM improves school performance only in the company of other important organizational conditions. These are conditions which support and directly foster the sort of individual and collective staff growth encompassed by the term "organizational learning" (OL). Such learning, then, is a vital matter to understand if we are to better appreciate what is entailed in successful school restructuring. In particular, it is important to understand how collective learning occurs in the many task forces, groups, committees and teams that are responsible for enacting the bulk of non-classroom business in restructuring schools. Exploring the meaning of team learning (as an instance of organizational learning) and the conditions which foster or inhibit its development was the purpose for the study reported in this paper.

Much has been written about group work already (e.g. Brightman, 1988; Worchel, Wood, & Simpson, 1992; Goodman, 1986; Hackman, 1991). But these sources have a decidedly prescriptive and managerial cast to them. As McGrath (1986) notes, what is largely missing is useful theory for understanding team learning and for aiding in the interpretation of empirical evidence. In particular, McGrath argues that "... we must study [and build theory to explain] work groups ... as intact social systems, and do so at a group level of analysis" (1986, page 368). The study reported in this paper began to address these limits on our understanding of team learning.

Framework

The theoretical starting point for our study was Neck and Manz's (1994) efforts to explain effective team functioning by extrapolation from a form of dysfunctional group behavior which Janis (1983) labelled "groupthink". Neck and Manz's framework was adapted for this study in light of other relevant theoretical and empirical work described more fully elsewhere (Leithwood, Jantzi & Steinbach, 1995; Leithwood, in press). This adapted framework builds on Hutchins' (1991) conception of team learning as the "mutual adaptation" of team members' patterns of action. Such learning is directly influenced by the nature of the team's leadership. It is influenced directly, as well, by a set of conditions for learning that grow out of the team's collective culture, something team leadership may also influence.

Both team leadership and team culture are shaped not only by team learning experiences but also by those more distal school (e.g., school culture, school policies) and out-of-school (e.g., District, Ministry or State, and local community) variables that provide the context for the team's and the school's work. According to this framework, the outcome of a team's learning is a

pattern of action. This may be a change from an earlier pattern, or a decision to continue with an existing pattern after, for example, carefully weighing alternatives and finding that current patterns remain a sufficient response to whatever was the stimulus prompting the team's thinking. In agreement with some others then (Cousins, 1995), this framework does not define team learning exclusively in terms of changed behavior.

Defining the outcome of a team's work as a pattern of action begs the question of how to define a group's effectiveness, a critical question for most people engaged in systematic inquiry about team learning in schools. Hackman (1991) and his colleagues offer one solution that is consistent with how team outcomes have been conceptualized to this point. This solution defines group effectiveness along three dimensions, each of which can be measured in a variety of ways. These dimensions include: the degree to which the team's products (decisions, patterns of actions and the like) meet the standards of quality, quantity, and timeliness of the team's "clients"; the degree to which the process of carrying out the work of the team enhances the capacity of the members to work together interdependently in the future; and the degree to which the group experience contributes to the growth and personal well-being of individual team members.

Patterns of action are the direct result of interrelationships among the individual cognitions of team members, characterized earlier as mutual adaptation. Based on their consideration of groupthink, Neck and Manz (1994) suggest that the productivity of these adaptive processes are most effective when the conditions for team learning ("teamthink") include: encouragement of divergent views; open expression of concerns and ideas; awareness of limitations and threats to the work of the team; recognition of members' uniqueness; and discussion of collective doubts.

The extent to which the conditions which enhance team learning are manifest depends on the team's culture, defined by three sets of variables included in the Neck and Manz framework. One set, shared norms, beliefs and assumptions, include dominant attitudes towards the team's work; the belief, for example, that problems are opportunities to overcome challenges rather than obstacles that will lead to failure. That these attitudes have an important effect on the team's thinking also is supported by evidence from studies of expert group problem-solving processes provided by Leithwood and Steinbach (1995).

A second set of variables included as part of team culture is team self-talk. For both individuals and groups, it has been suggested that self-talk can serve as a tool for self-influence directed at improving the personal effectiveness of members (Neck & Manz, 1994, Weick, 1979; Janis, 1983). Such talk could be aimed at putting social pressure on team members deviating from the group, as is the case in instances of groupthink. However, group self-talk also could focus on the importance of what Senge (1990) refers to as personal mastery - efforts by each team member to continuously improve the individual capacities they draw on to contribute to the collective effort. This seems likely to have quite positive effects on team learning.

Group vision is the final set of variables included as part of team culture. This vision provides a relatively coherent sense of the team's overall purpose as well as more immediate goals. When the vision is widely shared and understood it ought to be a primary resource for the team in determining what it needs to learn. Evidence provided by Leithwood, Jantzi and Steinbach (1995) suggests that more tacit and deeply imbedded assumptions about purpose and mission associated with organizational culture appear to be the main source of members understanding of the team's vision.

Two additional constructs directly associated with team learning are included in the framework for this study. The stimulus giving rise to the need for learning is sometimes conceived of as a crisis or an otherwise fairly dramatic event such as a strike (e.g. Watkins & Marsick, 1993) which forcefully draws group members' attention to the need for new learning. Recent research in schools (Leithwood, Jantzi & Steinbach, 1995), however, suggests that many phenomena have the potential to act as stimuli and that schools vary considerably in their sensitivity to these stimuli. Both individual and team learning in schools can be stimulated by relatively everyday events, such as ongoing attempts at incremental improvement. The mandate assigned a "task force" is another example of a common, if not routine, organizational event which also serves as a stimulus for team learning (Gersick & Davis-Sacks, 1991).

The final construct in the framework for team learning is school leadership. Prior evidence has suggested that leadership provided by school principals has significant associations with school and out-of-school variables. More specifically, principal leadership is significantly influenced by out-of-school variables and has a significant direct influence on school variables (Leithwood, 1994; Leithwood et al, in press; Hallinger & Heck, 1996), as well as on team culture. Our own evidence in support of these claims is based on a transformational model of leadership. Multidimensional in nature, this model has been described in terms of both overt leadership practices as well as the internal mental processes giving rise to such practices (Leithwood & Steinbach, 1993). The overt practices of transformational school leaders include group vision building and goal setting practices, the creation of collaborative cultures, setting high performance expectations, and providing psychological and material support for staff. Both formal and informal

strategies for stimulating staff members to think more reflectively and creatively about their work is also an overt set of practices associated with this model of leadership.

The framework for the study also asserts a direct influence of leadership on the conditions for team learning. Evidence in support of the plausibility of this link is provided by some of our research on the nature of transformational ("expert") principals' and superintendents' group problem-solving processes (Leithwood & Steinbach, 1995; Leithwood, Steinbach, & Raun, 1993). These studies describe school leaders facilitating the work of staff teams, for example, by ensuring that the knowledge of all members of the team is made explicit in team discussions and by encouraging innovative and coordinated action on the part of team members. In addition, these leaders also work to surface all members' interpretations of the problem(s) to be solved by the team and to develop, with the team, as clear as possible an interpretation of the problem(s). These leaders have well developed plans for collaborative problem solving which they share with team members and they periodically synthesize, summarize and clarify the progress of the team. These examples of expert team leadership seem likely to foster most of the conditions for team learning identified by Neck and Manz (1994), although our studies did not explicitly test this claim.

Team leadership, however, often is provided by those other than school administrators. This argues for caution in assuming that a set of practices apparently acceptable to, and productive for, a team when exercised by an administrator will be equally productive when used by others in possibly informal or temporary leadership positions. Formal leadership roles, like the principalship, typically are vested by others in the organization with expectations and power that are at least partly unrelated to the person in the

role. This has a significant effect on the meaning that members associate with the practices of the formal leader. The same assertive behavior might be interpreted by team members as "decisive" when it is exercised by a principal or superintendent but "overbearing and presumptuous" when exercised by an informal leader. So the transformational and expert group problem-solving practices alluded to here ought to be viewed as no more than promising guides for subsequent research on forms of leadership that foster team learning.

Guided by this framework, the specific questions pursued in our study were: What factors internal and external to the team foster or inhibit team learning in secondary schools? What is the nature of team leadership? What is it that stimulates team learning? How can team learning processes adequately be described? and What outcomes result from team learning in secondary schools? The study also aimed to refine the guiding conceptual framework itself.

Methods

This was the first of what will be a small series of studies on team learning in secondary schools. Part of what we hoped to learn from this study concerned the most useful forms of data to help understand team learning. Both qualitative and quantitative data were collected in this study from six teams in five secondary schools. Two of the teams (B and D) served as their school's main decision-making bodies. One team (E) assumed the role of helping their school become a learning organization. These three teams had general and wide-ranging responsibilities; they were dealing with broad school issues. In contrast, teams A and F had been assigned quite specific mandates which they had transformed into higher level goals related to the

needs of students. Team C was charged with a broad goal related to school improvement but that goal was transformed into something very specific (and unsatisfactory to them). Teams A, E, and F had four members each. Teams B, C, and D had from 10 to 20 members each.

In late spring 1996, members of each team were interviewed as a group regarding their team's activities since the previous September. Using variables from the conceptual framework for the study as a guide, a semi-structured interview schedule was developed and administered to each of the teams. Following the team interview, members were asked to individually complete a one page, 11 item, survey based on the framework for the study. Interviews lasted about two hours each with two of the teams (C and D) having their interviews conducted over two sessions.

Interviews were audiotaped and transcribed. Coding of transcriptions was guided by the variables and relationships included in the framework, remaining open to possible modifications and additions. Three research team members worked together on the transcripts to develop and refine the application of a coding scheme. Transcripts were divided into idea units, and each idea unit was scrutinized to determine its proper place in the framework. If all three coders agreed that an idea unit did not fit the existing framework, a new category was added to the framework.

Results

Transcript coding yielded a total of 963 idea units, with a range of 132 to 197 per transcript. The mean number of idea units was 160.5. After coding all the transcripts and examining the responses of each team according to the framework, the teams sorted themselves into two main categories, functional

and potentially dysfunctional, mainly based on their statements coded as *conditions* for team learning.

Conditions for Team Learning

Teams A, B, and C experienced conditions which could eventually lead to "group think" or faulty decision making that could prevent the teams from meeting their goals. Teams D, E, and F, on the other hand, experienced mainly positive conditions for team learning. Table 1 lists the conditions for team learning, along with the frequency of mention for each team. Positive and negative frequencies are reported, negative being an indication of practices opposite to those fostering team learning. This is true for all conditions but group structure, which is a measure of the team's composition, how often they met, whether or not they volunteered, the roles they played on the team, how they divide tasks, etc.).

From the numbers alone, it is clear that the potentially dysfunctional teams have proportionately 5 times as many comments coded as negative conditions, as do the functional teams (21% vs. 4%). But numbers cannot tell the whole story here. All teams show respect for each other, physical conditions are adequate for all, and they all report to the appropriate stakeholders.

Looking at the dysfunctional teams, it is evident from Table 1 that teams A and B each have a shared purpose whereas team C does not. Team A does not *encourage divergent views*, team B does moderately, and team C does more than even teams D and E. However, it is what those numbers represent that is critical. For teams B and C the only positive instances of divergent points of view occurred during the interview for this study when members were observed openly disagreeing with each other. It was much the

same for *open expression of ideas*, with the positive scores of teams B and C mainly reflecting direct observations of members openly expressing their opinions during the interview or else replying to direct questions about how open they are. However, the following comment from one team member is more indicative of how that team typically operated: "I think we spend more time avoiding hurting the other person or avoiding conflict with the other person, than actually having it".

The *awareness of limitations* dimension "involves a realistic appraisal of difficult situations that leads to the necessary preparation and application of skills to overcome existing challenges" (Neck & Manz, 1994, p. 939). Being aware of limitations is a necessary condition of team learning, but only if those limitations are acknowledged by team members and only if they are not completely debilitating. Too many perceived limitations might also be counter-productive. Team A mentions very few limitations, while teams B and C mention many and the interview for the study appears to have been the first opportunity they had to give voice to these limitations.

Members of team A *interact* a great deal; members of teams B and C do not. One member of team B said, for example: "I don't think we as a group handle conflict that well. I think we take it to the back room all the time ... we don't sit here and talk it out; we go to our own colleagues ... instead of sorting it out together". Similarly, a member of team C observed: "I think we all want the best for the school, but I don't know whether we have been able to share exactly what our feelings are ...", and "I've never talked outside of the meeting to anybody about what's going on in our meetings".

While team A has too much *autonomy*, it is not mentioned by team B and team C feels they have none at all. In spite of only one explicit comment, team A appeared to have very *high morale*. There were no indicators of

morale for team B, and evidence from team C showed very low morale. All three teams complained about the lack of *time* to meet.

The extent to which the teams experienced *cohesiveness* was manifested by evidence of shared beliefs (e.g., "we're very unselfish about time"), shared culture (e.g., "I guess we're very pragmatic people") and agreement among members during the interview. According to Neck and Manz (1994), "the primary antecedent condition necessary for group think is a moderately or highly cohesive group" (p. 932). Janis (1983) has argued that "the more amiability and *esprit de corps* among the members of an in-group ... the greater the danger that independent critical thinking will be replaced by group think" (quoted in Neck & Manz, 1994, p. 932). This is the defining feature of team A. They were friends who saw each other constantly, and were motivated by the same goals.

Some forms of cohesiveness are desirable and necessary for team learning, however, while others are destructive. Group norms that promote constructive thinking are valuable. Group norms that create "pressure towards consensus" (Neck & Manz, 1994, p. 943) can lead to group think. All of the functional teams exhibited substantial amounts of cohesiveness (see Table 1). While members maintain their separate identities, they share certain beliefs and values that help them work together successfully. They believe they are all committed to the task at hand, and they all want what is best for the school.

While team A is too cohesive, team B is not cohesive enough. As one member noted: "there's 4 or 5 camps officially or unofficially and they swing around on the issues and stuff like that". These team members also contended that their differences had been a source of conflict.

Team C provided an example of shared beliefs that were counterproductive. They were joined by common feelings of distrust, discontent, and dissatisfaction, much of which was directed towards the school's administration.

There was no *discussion of collective doubts* by team A, limited evidence of such discussion for team B, and ample evidence for team C.

Group structure was relaxed and flexible for team A with the notable feature of being the only team in the school that did not have an administrator as a member. Team B membership included all staff with positions of responsibility, but there was lack of continuity because those positions were temporary. There was lack of continuity for team C as well, and its members met every 2 or 3 weeks. Members of team C were not all volunteers.

Conditions for team learning within each of these teams can be summarized as follows:

Team A: Evidence from this team suggested many conditions giving rise to group think. These conditions included: the coupling of a highly moral shared purpose (i.e., improving the lives of kids) with an extremely cohesive membership; almost complete autonomy with no discussion of collective doubts; little open expression of ideas; little awareness of limitations; and no encouragement of divergent thinking.

Team B: Teams A and B had some common and some differerent characteristics. While team A was very cohesive, team B was not. Team A had a clear and compelling shared purpose; this team did not. Team A's members interacted a good deal; this team rarely did. But team B seemed more likely to evolve into a productive group in the future than team A. While there were a large number of conditions inhibiting team learning, the

interview for the study provided team members the opportunity to reflect on them. Team A was aware of very few limitations. Neither team encouraged divergent views but team B wanted to and team A did not. Team B was committed to improving the team's functioning (one of their shared purposes) and they appear to have that potential. Team A considered their functioning not to require improvement.

Team C: Conditions within this team that could easily lead to group think included: no clear or compelling goal, an inability to be open with the administration and very limited interaction among team members. While members' morale was very low, they respected each other and there was a degree of cohesiveness in their shared cynicism. But they did not see themselves as a team. One member's ability to serve as a counterpoint to the negativity and the team's ability to be open during the interview bodes well for the future.

Teams D, E, and F: Most conditions for team learning were evident in the three well-functioning teams. While cohesiveness was high, it was balanced by the open expression of their opinions and the encouragement of divergent points of view. The teams were cohesive, not because all members held the same opinions, but because of their commitment to the work they were doing together.

Team Learning Processes

The starting point for our inquiry about team learning processes was Hutchins' (1991) conception of "mutual adaptation". Initial attempts to code the interview data concerning learning processes was guided by this conception. But these attempts largely failed, and we found our data fit much better a conception of team learning as "problem solving". Elements of group problem-solving processes used to code the interview data concerning team

learning were drawn from a model of individual and group problem solving developed in our earlier research (e.g., Leithwood & Steinbach, 1995).

Table 2 displays the frequency of mention for each of the teams of each component of problem solving identified in this earlier research. All teams devoted approximately equal percentages of their statements to team learning processes and nearly identical numbers of steps were described. Each group of three dysfunctional and three functional teams mentioned 14 *values*. Lack of evidence from team F with respect to *interpretation* and *goals* reduced the number for the functional category of teams (this may have been a coding problem, or this team might have been clear about their problem, not needing to grapple with it to the same extent as some other teams). The less functional teams described substantially more *constraints* than did the more functional teams.

The quantification of these data, as in Table 1, is of limited value, however. Leaving *mood* aside, every team but one mentioned all aspects of problem solving. *Interpretation* (processes used to clarify and define the nature of the problem) varied across teams and was mostly related to the particular problem central to the team's purpose. Relevance to the whole organization was mentioned by two of the less successful teams. One team, in particular, was prompted by the interview process for the study to understand the underlying causes of their dysfunction for the first time.

Goals (processes used to identify the more specific tasks to be accomplished in order to solve the problem as it has been interpreted) frequently involved all stakeholders and often mixed goals related to a specific task with higher level goals, like meeting student needs. Commitment to the process was voiced by two teams, one of the functional and one of the dysfunctional teams.

Use of moral and professional *values* was evident in all teams. Consequences for students, fairness, role responsibility, knowledge, risk-taking, respect for staff, courage, and caring, were often mentioned.

For the most part, *constraints* (those challenges to be met if goals are to be achieved) appeared not to serve as major stumbling blocks for the teams. In the case of the more functional teams, constraints were all task related and were being addressed. During the research interview process, two of the less functional teams (B and C) began to work through constraints that were originally felt to be insurmountable. For team A, circumventing obstacles was a game.

There was very little difference in the number of *solution process* steps used by both categories of teams. Most teams used a wide variety of solution strategies. They planned, consulted with others, gathered information, discussed issues, brainstormed, monitored the progress of solutions, clarified information, and reflected. However, each of the functional or successful teams had a clear understanding of how they worked through their problems whereas the less successful teams did not have such a coherent understanding. For example, some members of teams D, E, and F, described their team learning processes as follows:

- "we all put together our bits of infomation and then we came up with a better, bigger, clearer picture of what's happening in this school"
- "I remember we spent a lot of time trying to figure out how we could have specialization units. Remember we went through all the pros and all the cons and how it would work. We spent a whole day working that out. I wouldn't say that was a roadblock, but we just brainstormed, brainstormed, brainstormed ... it was like we had this big problem to solve and we just went around looking at it from different angles until we saw a

way through and then maybe thought, you know, this is the best way, and yeah, it is the best way, and off we went"

- "we kind of jumped into it and worked, we really worked our way through it. Sometimes muddled, sometimes things weren't clear, but we just kept plodding away"

Team learning processes of the less successful teams are summarized below.

Team A: The solution strategies used by members of team A reinforced the tendency towards group think. Their repertoire of strategies was limited. They mainly met and shared information with each other, although they did talk with parents and students. Their frequent ad hoc meetings were not conducive to careful deliberation. Their self-proclaimed style of operating was to "jump into it and try it" and then fine-tune things afterwards, and, according to Robinson (1995), there is evidence that such trial and error learning does not lead to success in complex organizations. The most salient items were two comments coded as directly observed reflection: "we should have learned from [the previous] situation", and "we could have done a little bit more thinking". This reflection should have happened earlier . Although the team accomplished its purposes, it left itself open to considerable risk unnecessarily.

Team B: This research interview with team B became an opportunity for members to deal with poor communication patterns (and statements about this issue are reflected in each component of the problem-solving model). The fact that their repertoire of problem-solving strategies was limited may have been a consequence of their apparent lack of practice prior to the interview. The fact that they were able to be open and honest about their difficulties during the interview, and the fact that they were able to pinpoint

areas for improvement suggested that this team might be capable of significantly improving its own learning processes.

Team C: During the research interview, team C was able to get at the heart of the problem they had set for themselves. It did not look like they were working on their inability to confront the administration but the outcomes tell a different story. Perhaps the opportunity to vent their frustrations resulted in new understandings. Their wide repertoire of problem-solving strategies and interest in obtaining all the information may help this team overcome the contextual obstacles (reported later).

Team Learning Outcomes

The frequency counts shown in Table 3 indicate relatively little difference between the two categories of teams. They all described some *changed patterns of action* and all reported *increased knowledge and understanding* about the content of their work or about how successful teams operate. But the coded transcripts showed that 23 of those new understandings occurred during the interview in the case of the less successful teams, whereas, for the more successful teams, only 3 were directly observed during the interview. Team A finally realized that they had made a serious mistake. Team B learned that their real job was to improve how they related to one another. Team C made dramatic leaps in new knowledge about their focus and their abilities as a team; they realized that their mistake was "ending up focusing on the things we could change, which were, I think, more trivial things".

The successful set of teams were less sanguine about *client satisfaction* - they were not so sure that all staff members and/or students in their schools were even aware of what they were doing.

Team C had mixed feelings about the *future*, but thought they could learn from their mistakes. All other teams were very optimistic about the future. Teams E and F, in particular, claimed a much strengthened culture due to their team's work. The one negative item from team F pointed to a lack of time to complete their current work before moving on to their next task.

The less successful category of teams showed no change in *cohesiveness* as a result of their team work, whereas the more successful teams believed they had become a more strengthened unit.

Team E showed the greatest increase in *member capacity*. They learned from each other, and from the journal articles they read and discussed.

The scores on *member satisfaction* for three of the teams indicated mixed feelings. Team B members had felt that what they were doing had merit, but the way the team functioned needed improvement. Team C was pleased with some of their work, but they were very disappointed with the outcome of their work (part of what was learned by this team, though, was that the product of their work could be viewed as part of a larger initiative). Team F was very satisfied with their team and the outcome of its work, but unsatisfied with the implementation of that outcome, something over which they had no control.

Client capacity is the impact of a team's work on staff and/or students in its school. For example, in team C, teachers were being trained and were beginning to contribute their own ideas. In team D, staff were becoming aware of what the team did, and staff and students were beginning to benefit from this work. Team C believed that the school staff were unaware of their work.

The team learning outcomes of the less successful teams are summarized below.

Team A: The work of this team brought about a lot of positive change for the school, and the team made some changes, as well. The team was happy and believed their clients were well-served. However, during the interview, they began to realize that they could have learned from an unfortunate incident so as not to repeat it again.

Team B: Outcomes were predominantly related to the discussions generated by the research interview. They learned the need to be more open with each other, and to meet for longer periods of time. They learned the need to come to clear decisions together and to have all team members support these decisions regardless of how they voted. It became obvious during the interview that members were beginning to better understand their differences and beginning to feel more optimistic about the future.

Team C: The opportunity to reflect, provided by the interview, resulted in dramatic turn-arounds in this team's thinking, indicating a definite capacity to learn. It was unclear whether they could do it on their own if the school administrator remained on the team, and if this team continued to lack a clear and compelling purpose.

The successful teams learned a great deal and produced favorable outcomes. These teams learned about team work requirements, along with some specific content to help them in solving their problems.

Conditions External To The Team Influencing Learning

Taken from our larger organizational learning framework, external conditions consist of out-of-school variables (district, Ministry, and community); school variables (vision, culture, structure, strategy, and resources), and leadership practices of the school administration. Ninety-six

concerns, and tried not to interfere with the team's decision-making process. Teams did not like top-down or unilaterial decision-making, lack of support and the exertion of political pressure by principals. One team believed they were simply a conduit for the administration's agenda.

Viewing the principal's influence as negative was not necessarily detrimental to effective functioning. One team was successful; the other was not.

Team Leadership

The team leader potentially exerts a powerful influence on group thinking. According to Neck and Manz (1994), "the group leader serves as a primary mechanism by which the group mind revolves" (p. 942). For the team's thinking to be constructive, the leader needs to encourage diversity of viewpoints and an atmosphere of open inquiry. In this study teams A, E, and F claimed that their members shared leadership responsibilities. In team B, the principal chaired the meetings and there was no formal leadership other than the principal. In team C, two members co-chaired the meetings although they claimed that the vice-principal was the real leader of the team. In team D one of the members was the formal leader, and she exhibited excellent group problem-solving skills, e.g., clarifying, checking perceptions, asking for alternative points of view. Teams C, E, and F also had members who provided the necessary group problem-solving skills.

Stimulus For Team Learning

Team A was the only team interviewed that was formed because the members wanted it. Teams B, C, D, and F were involved in initiatives mandated by their boards and/or the Ministry. Team E was begun as a result of the previous principal's involvement with an OISE study group, and was continued by the current principal who was also a member of that group.

Quantitative Results

A total of 48 teachers from six teams completed the 11 item learning survey. Collapsing the five point rating scale into three categories - low (1 and 2), medium (3 and 4) and high (5 and 6) - indicates that over half of all respondents were very positive about most aspects of their team's operation with most others feeling moderately positive or neutral. A small percentage of respondents indicated that their teams were not working very well. The majority claimed that in their teams the expression of divergent points of view and the open expression of ideas was strongly encouraged; the team usually believed that what it was trying to achieve was exactly what the school needed; each member's unique skills and abilities were highly valued by other team members; when the team was uncertain about what it was doing, there were collective efforts to consider alternative courses of action; the capacity of the team members to work together in the future had been enhanced; and, as a result of being part of the team, members had changed their thinking a good deal and had implemented many new practices.

Exactly half of the respondents said that their commitment to teaching had grown considerably as a result of working on their team. The remainder reported not changing or changing moderately (some respondents penciled in that their levels of commitment were already very high and so they couldn't change). Just under half of the respondents (48%) said that they had learned many new ways of doing things, 38% had learned some new techniques, and 15% said that they had developed few new skills.

Results in response to one item were much less positive. Forty-eight percent of all respondents reported that their team's work had been only moderately appreciated by other members of the school, while 25% said their

work was not appreciated at all (27% felt that their work had been highly valued by other members of the school).

Aggregated to the team level, survey results confirmed interview results. Team A had the highest mean score (5.4) along with a relatively low standard of deviation (.45). Members of this team were consistently pleased with the way they functioned. Teams B and C had the lowest scores (M = 4.2 and 2.9 respectively), reflecting their general dissatisfaction with the way their teams operated. Evidence in the qualitative data analysis showed team B to be the least cohesive group, and the comparatively high standard deviation scores for most items on the survey tend to confirm this finding (mean sd = 1.1).

Teams D, E, and F had moderately high mean scores (4.8, 5.2, and 5.0) which indicated that, although they felt that their team worked well, there was room for improvement.

The item that received the lowest score was item 6 (M = 3.8). Teams did not believe that their work was appreciated enough by other staff members.

Summary and Discussion

Guided by a framework adapted from Neck and Manz (1994), this study inquired about the nature, causes and consequences of team learning in five secondary schools. Data for the study were collected primarily through group interviews. A total of 48 individual team members responded to an eleven item survey about team learning conditions, as well. Figure 1 indicates the nature of the framework revised in response to our results, and summarizes the results of the interview evidence, as well. The figure identifies the distribution of idea units coded across each set of variables in the framework, along with an indication of how many of these idea units were associated positively and negatively with some aspect of team learning.

As the numbers in Figure 1 indicate, by far the bulk of the interview data concerned team learning processes, internal conditions for team learning, and the outcomes of team learning. The interview data were relatively sparse with respect to the leadership of the school administrator.

In comparison with the initial framework which guided data collection, the main difference in Figure 1 is how team learning processes have been conceptualized. Initially these processes were viewed, after Hutchins (1991), as entailing the mutual adaptation of patterns of action among team members. We were unable to satisfactorily code our data in these terms, however. This might have been due, for example, to differences in the nature of our teams and their tasks as compared with Hutchins' team, differences in types of data (interviews vs. direct observations), or some other factor or combination of factors. Our data were readily codable, however, around the elements of a group problem-solving model developed in our earlier research. Although adopting a different set of elements within which to describe problem solving, Robinson (1995) also has argued for a conception of organizational learning as problem solving rather than adaptation or change.

Consistent with a view of team learning as problem solving, Figure 1 also includes a modified conception of the nature of team leadership as compared with our initial framework, a conception based on the skills required to facilitate effective group problem solving of the sort used by expert principals and superintendents (Leithwood & Steinbach, 1995; Leithwood, Steinbach & Raun, 1993). Team leadership, according to our evidence, can make a significant difference to a team's learning. The presence of at least one team member who is ready to contradict or point out the fallacies in members' thinking fosters learning. This person does not have to be the nominal leader. Anyone (and preferably everyone) can exercise expert group problem-

solving processes with advantage to the team's learning. In the absence of leadership from within the team, even a neutral facilitator from outside the team can help groups become reflective, especially when that person makes explicit efforts to improve the group's processes.

Figure 1 identifies a set of internal conditions influencing team learning extending considerably beyond those conditions identified by Neck and Manz (1994) from the research of Janis. Analysis of the data from interviews with 6 teams revealed two categories of three teams each. Teams A, B, and C were classified as dysfunctional, and teams D, E, and F were classified as functional. The functional teams met the conditions for team learning, had a large repertoire of effective group problem-solving strategies, and attributed most of their reported changes to work that had occurred prior to the interview. The teams classified as dysfunctional were missing many of the internal conditions for team learning. Furthermore, most of the evidence concerning their problem-solving processes and learning outcomes appeared to have been stimulated by the research interview itself. Some of the conditions fostering team learning for these three teams also appeared to be the result of the interview process, apparently non-existent prior to the interview. Although the interviews were intended to provide retrospective evidence of team learning, for the dysfunctional teams (especially teams B and C) this was not the case.

While the conditions fostering or inhibiting learning among the functional teams were similar, dysfunctional teams varied. Team A exhibited many of the classic symptoms of "destructive group tendencies" (Neck & Manz, 1994, p. 947) labelled "group think" by Janis. In this team there also was evidence of "an unquestioned belief in the group's inherent morality" (Neck & Manz, 1994, p. 933) due to their unwavering concern for the welfare of their

students. This team engaged, as well, in "collective efforts to rationalize" the potential negative consequences of a bad decision.

Team A's approach to divergent opininions provided a good illustration of a problem central to collective learning, the importance of finding a balance between generating diversity and building consensus. Fiol (1996) refers to this balance as "unified diversity". Team A discouraged divergent opinions and limited attempts to gather information. But it also had very high levels of cohesiveness which prevented independent thinking. In contrast, argues Fiol, "Managers must actively encourage the development of different and conflicting views of what is thought to be true, while striving for a shared framing of the issues that is broad enough to encompass those differences (1996, p. 174).

Team B was not at all cohesive, and members of team C were alike in their dissatisfaction. While both teams were able to carry out their assigned tasks, they were not as successful as they could be and they were not pleased with the way they were working. Teams B and C used the interview session as an opportunity to give vent to many of their concerns. In the presence of the interviewer, they were able to act as functional teams and apparently to learn a great deal as a result. Even team A seemed to have an insight about their behavior, given the opportunity to reflect during the interview.

Finally, our evidence suggests that teams are capable of learning and successfully working with initiatives mandated from outside of the school. While a negative context clearly does not assist learning, it does not present an insurmountable obstacle to such learning either. It also seems to be the case that small schools facilitate team learning through the proximity of members and the interaction that occurs among them as a result.

Conclusion

This study provided preliminary information about how teams function in secondary schools. Results of the study help refine a model for further investigation of team learning. Several specific questions were not well addressed by the present study and would be useful foci for subsequent research including: What types of school administrator practices would contribute to the work of the team? How important are constraints as stimuli to learning? How are the constructs in the framework linked in practice? What is the actual relationship between team learning processes and outcomes? Direct observation of teams during their work would add useful information and perhaps provide better insights about team learning processes than were available from our interview data.

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Table 1:
Conditions for Internal Team Learning: Frequency of Mention by Each Team

	DYSFUNCTIONAL						FUNCTIONAL									
	Team A N=4		Team B N=20		Team C N=10		Team D N=18		Team E N=4		Team F N=4		Total Dysfunc.		Total Func.	
	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
A clear, compelling shared purpose/vision	6	0	5	0	4	6	3	0	9	1	2	0	15	6	14	1
Encouragement of divergent views	0	2	1	1	4	0	3	0	2	0	4	0	5	3	9	0
Open expression of ideas	1	0	3	2	4	1	4	0	3	0	5	0	8	3	12	0
Awareness of limitations	3	0	16	0	10	0	3	0	1	0	7	0	29	0	11	0
Recognition of members' uniqueness (respect for colleagues)	6	0	2	0	3	0	2	0	3	0	2	0	11	0	7	0
Collaboration, coordination, communication (interaction)	7	0	1	2	1	2	6	0	2	1	2	0	9	4	10	1
Some level of discretion/ autonomy	4	0	–	–	0	2	–	–	–	–	1	0	4	2	1	0
High morale	1	0	–	–	0	5	1	1	1	0	–	–	1	5	2	1
Adequate time	0	1	0	3	0	5	–	–	–	–	0	1	0	9	0	1
Suitable physical conditions	1	0	–	–	–	–	1	0	–	–	2	0	1	0	3	0
Appropriate external accountability	2	0	3	0	3	0	3	0	2	0	2	0	8	0	7	0
Cohesiveness (shared beliefs and culture)	23	0	3	3	14	4	17	0	10	0	17	0	40	7	44	0
Discussion of collective doubts	–	–	1	0	7	0	–	–	2	0	4	0	8	0	6	0
Group structure	5	0	1	1	2	0	5	0	5	1	1	0	8	1	11	1
Conditions Idea Units: Total	**59**	**3**	**36**	**12**	**52**	**25**	**48**	**1**	**40**	**3**	**49**	**1**	**147**	**40**	**137**	**5**
Total idea units	**191**		**135**		**197**		**162**		**146**		**132**					
Conditions as a % of total	**32%**		**36%**		**40%**		**30%**		**29%**		**38%**		**21% neg**		**4% neg**	

Table 2:
Team Learning Processes: Frequency of Mention of Each Component by Each Team

	DYSFUNCTIONAL			FUNCTIONAL			Total Dysfunc.	Total Func.
	Team A Freq. (%)	Team B Freq. (%)	Team C Freq. (%)	Team D Freq. (%)	Team E Freq. (%)	Team F Freq. (%)	Freq (%)	Freq (%)
Interpretation	2 (4)	6 (19)	9 (21)	3 (8)	1 (3)	– –	17 (14)	4 (4)
Goals	5 (10)	6 (19)	3 (7)	6 (15)	3 (9)	– –	14 (11)	9 (9)
Values	9 (18)	4 (13)	1 (2)	7 (18)	4 (12)	3 (12)	14 (11)	14 (15)
Constraints	11 (22)	6 (19)	13 (30)	4 (10)	5 (16)	7 (28)	30 (24)	16 (17)
Solution Processes	24 (47)	9 (29)	17 (40)	19 (49)	19 (59)	14 (56)	50 (40)	52 (54)
Mood	– –	– –	– –	– –	– –	1 (4)	– –	1 (1)
TOTAL	**51 (27)**	**31 (23)**	**43 (22)**	**39 (24)**	**32 (22)**	**25 (19)**	**125 (24)**	**96 (22)**

Table 3:
Team Learning Outcomes: Frequency of Mention of Each Component by Each Team

	DYSFUNCTIONAL						FUNCTIONAL						Total Dysfunc.		Total Func.	
	Team A		Team B		Team C		Team D		Team E		Team F					
	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Changed patterns of action	16	1	3	0	2	0	5	0	8	0	3	0	21	1	16	0
Increased knowledge/skills/ understanding	12	0	15	0	17	0	19	0	14	0	8	0	44	0	41	0
Client satisfaction	9	0	1	0	–	–	5	0	4	1	2	3	10	0	11	4
Future group capacity	1	0	7	0	4	3	3	0	8	0	8	1	12	3	19	1
Cohesiveness	–	–	–	–	–	–	2	0	3	0	3	0	–	–	8	0
Individual member capacity	1	0	1	0	0	1	1	0	5	0	–	–	2	1	6	0
Member satisfaction	11	2	7	6	4	7	9	0	5	1	7	6	22	15	21	7
Client capacity	3	0	1	0	0	1	4	0	2	2	2	0	4	1	8	2
TOTAL	**53**	**3**	**35**	**6**	**27**	**12**	**48**	**0**	**49**	**4**	**33**	**10**	**115**	**21**	**130**	**14**
% of total	**29%**		**30%**		**20%**		**30%**		**36%**		**33%**		**26%**		**33%**	

Table 4:
Context for Team Learning: Frequency of Mention by Each Team

	DYSFUNCTIONAL						FUNCTIONAL						Total Dysfunc.		Total Func.	
	Team A		Team B		Team C		Team D		Team E		Team F					
	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Out-of-School Variables																
District	2	1	1	0	3	3	3	0	–	–	1	1	6	4	4	1
Ministry	–	–	–	–	0	2	0	1	–	–	1	0	0	2	1	1
Community	–	–	1	0	–	–	0	1	–	–	–	–	1	0	0	1
In-School Variables																
Vision	–	–	–	–	1	0	–	–	–	–	–	–	1	0	–	–
Culture	3	1	1	2	2	4	3	2	1	1	0	1	6	7	4	4
Structure	1	0	5	0	0	2	1	1	2	1	0	1	6	2	3	3
Strategy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Resources	3	0	–	–	0	1	–	–	–	–	–	–	3	1	–	–
School Leadership	4	0	2	0	3	7	7	0	7	0	1	4	9	7	15	4
TOTALS	**13**	**2**	**10**	**2**	**9**	**19**	**14**	**5**	**10**	**2**	**3**	**7**	**32**	**23**	**27**	**14**

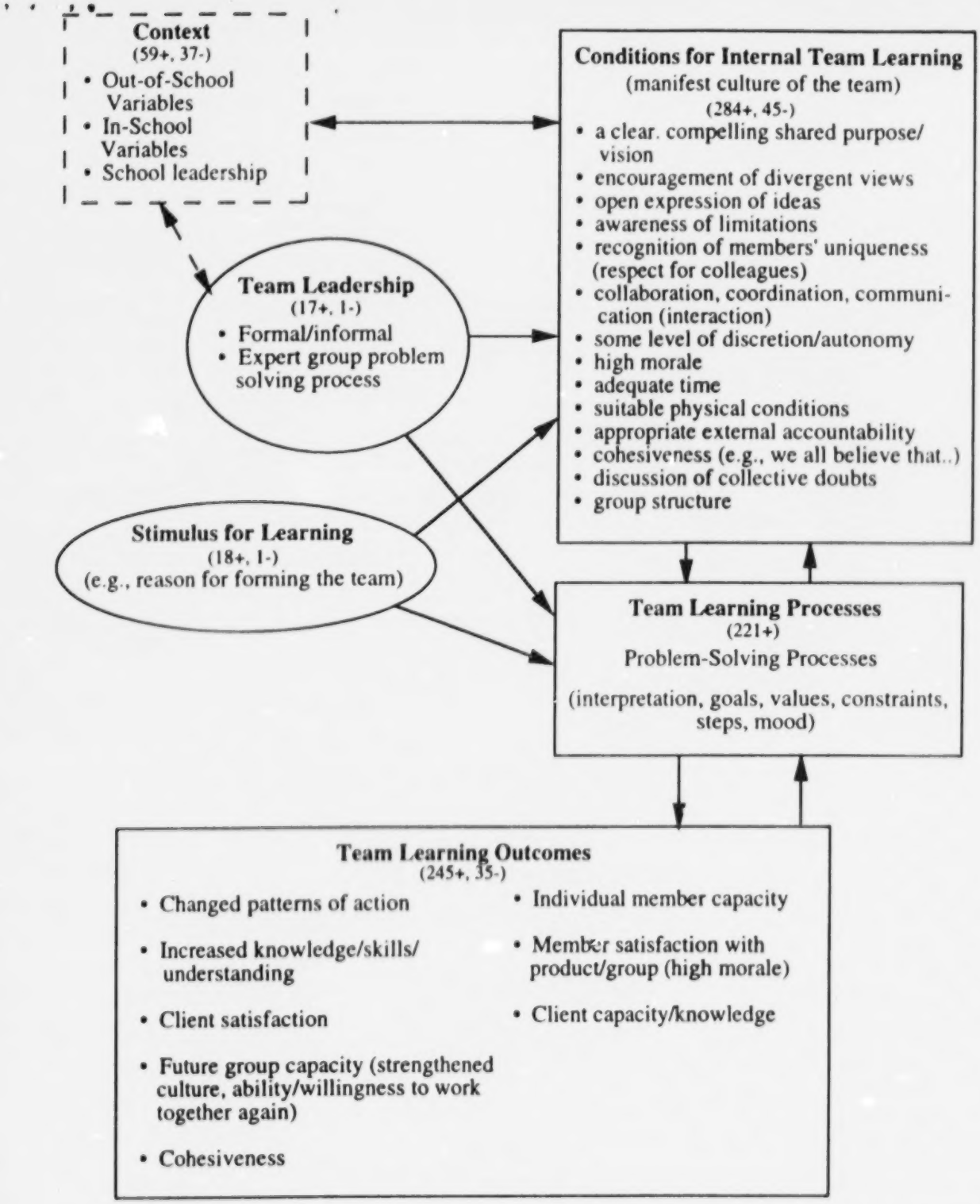
Context
(59+, 37-)
• Out-of-School Variables
• In-School Variables
• School leadership
Conditions for Internal Team Learning
(manifest culture of the team)
(284+, 45-)
• a clear, compelling shared purpose/ vision
• encouragement of divergent views
• open expression of ideas
• awareness of limitations
• recognition of members' uniqueness (respect for colleagues)
• collaboration, coordination, communication (interaction)
• some level of discretion/autonomy
• high morale
• adequate time
• suitable physical conditions
• appropriate external accountability
• cohesiveness (e.g., we all believe that..)
• discussion of collective doubts
• group structure
Team Leadership
(17+, 1-)
• Formal/informal
• Expert group problem solving process
Stimulus for Learning
(18+, 1-)
(e.g., reason for forming the team)
Team Learning Processes
(221+)
Problem-Solving Processes
(interpretation, goals, values, constraints, steps, mood)
Team Learning Outcomes
(245+, 35-)
• Changed patterns of action
• Increased knowledge/skills/ understanding
• Client satisfaction
• Future group capacity (strengthened culture, ability/willingness to work together again)
• Cohesiveness
• Individual member capacity
• Member satisfaction with product/group (high morale)
• Client capacity/knowledge

Figure 1: A framework for inquiring about team learning processes, including frequency of codes associated with each construct